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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,816	05/11/2001	Fouad A. Tobagi	PA1689US	7692
22830	7590	12/09/2004	EXAMINER	
CARR & FERRELL LLP 2200 GENG ROAD PALO ALTO, CA 94303			PHAN, MAN U	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/853,816

Applicant(s)

TOBAGI ET AL.

Examiner

Man Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/17/01, 6/17/02</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

1. The application of Tobagi et al. for a "System and method for controlling data transfer rates on a network" filed 05/11/2001 has been examined. Claims 1-35 are pending in the application.

### ***Specification***

2. **Cross References need to be updated.**

The disclosure is objected to because of the following informalities: Under cross references to related applications, the co-pending application status needs to be updated.

### ***Claim Rejections - 35 USC ' 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 17 and 26 recite limitations "the frequency". There is insufficient antecedent basis for these limitations in the claims.

Claims 3, 18 and 27 recite limitations "the amount of data read". There is insufficient antecedent basis for these limitations in the claims.

Corrections are required.

*Claim Rejections - 35 USC ' 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 1038 and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-6, 9-12, 16-21 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US#6,715,007) in view of Merchant et al. (US#5,933,413).

With respect to claims 16-19 and 25-28, Williams et al. (US#6,715,007) and Merchant et al. (US#5,933,413) discloses method and system for rate-based flow control in conjunction with TCP/IP network, according to the essential features of the claims. Williams discloses in

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Fig. 1 a block diagram illustrated the data flow regulation in communication systems, in which the data rate is established in each of a data source (24) and a data sink (28). The data (26) is transmitted by the data source (24) and written into a buffer (32) at the source data rate, then read from the buffer (32) and received by the data sink (28) at the sink data rate. The level (62) of data (26) in the buffer (32) is monitored, and a rate-control signal (74) is dispatched to either the data source (24) or sink (28) when it is determined the buffer data level (62) is decreasing or increasing while at a lower or upper data-level threshold (66, 68), respectively. One of the data rates is adjusted in response to a rate-control signal (74) (See also Fig. 3; Col. 2, lines 57 plus and Col. 4, lines 27 plus).

Williams et al. (US#6,715,007) differs from claims in that Williams does not expressly disclose the amount of available space in the receive buffer is maintained at a regulated value. In the same field of the endeavor, Maechant et al. (US#5,933,413) discloses a network interface capable of allocating bus interface and buffer resources in a host computer system to improve network and system throughput. The network interface stores data frames received from the host computer via a peripheral component interconnect (PCI) bus in a transmit buffer for transmission on the network. The network interface also stores data from the network in a receive buffer for transfer to a host computer memory via the PCI bus. A priority control selectively allocates host computer resources based on network transmission and network reception by the network interface, and based on available space in the receive buffer, available data in the transmit buffer, and the estimated length of data packets received from the network. The selective allocation of host computer resources minimizes transmit buffer underflow and receive buffer overflow (Figs. 1A&B; Col. 2, lines 17 plus).

Regarding claims 20-21 and 29-30, the use of standard FTP/HTTP transmission in the receiver to provide the server with the ability to retrieve and transmit data files, and the reliance on a commonly known standard such as the use of standard FTP and HTTP protocols over network through network interface in the manner claimed would have been obvious to the artisan as a matter of the application programming interfaces.

Regarding claims 1-6 and 9-12, they are method claims corresponding to the apparatus claims above. Therefore, claims 1-6 and 9-12 are analyzed and rejected as previously discussed with respect to claims 16-19 and 25-28.

One skilled in the art would have recognized the need for effectively and efficiently routing and processing of information in packet switching network, and would have applied Merchant' novel use of the network interface with a priority control based on available space in the receive buffer into Williams's teaching of the data flow regulation in processing packets in TCP/IP network. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Merchant' adaptive priority determination for servicing transmit and receive in network controllers into Williams's method of regulating a flow of data in a communication system and apparatus therefor with the motivation being to provide a method and system for regulating the rate of transmission under TCP/IP protocols network.

7. Claims 7-8, 13-15 and 22-24, 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US#6,715,007) in view of Merchant et al. (US#5,933,413), as applied to the claims above, and further in view of Packer (US#6,038,216).

With respect to claims 22-24 and 31-35, Williams and Merchant disclose the claimed limitations discussed in paragraph 6 above. However, Williams and Merchant do not expressly disclose the regulation of a rate at which data is removed is a function of a determined frequency of lost packets. In the same field of endeavor, Packer (US#6,038,216) discloses a method for controlling data rate of data packets in a digital data packet communication environment employing TCP/IP protocols, in which TCP has 'flow control' mechanisms operative at the end stations only to limit the rate at which a TCP endpoint will emit data. The sliding window flow control mechanism works in conjunction with the Retransmit Timeout Mechanism (RTO), which is a timeout to prompt a retransmission of unacknowledged data. The timeout length is based on a running average of the Round Trip Time (RTT) for acknowledgment receipt, i.e. if an acknowledgment is not received within (typically) the smoothed  $RTT + 4 * \text{mean deviation}$ , then packet loss is inferred and the data pending acknowledgment is retransmitted. Data rate flow control mechanisms which are operative end-to-end without explicit data rate control draw a strong inference of congestion from packet loss (inferred, typically, by RTO). TCP end systems, for example, will 'back-off', i.e., inhibit transmission in increasing multiples of the base RTT average as a reaction to consecutive packet loss. Bandwidth Management in TCP/IP Networks (Figs. 2A-I; Col. 1, lines 49 plus and Col. 3, lines 17 plus)

Regarding claims 7-8 and 13-15, they are method claims corresponding to the apparatus claims above. Therefore, claims 7-8 and 13-15 are analyzed and rejected as previously discussed with respect to claims 22-24 and 31-33.

One skilled in the art would have recognized the need for effectively and efficiently routing and processing of information in packet switching network, and would have applied Packer's controlling data rate of data packets in TCP/IP protocols network, and Merchant's novel use of the network interface with a priority control based on available space in the receive buffer into Williams's teaching of the data flow regulation in processing packets in TCP/IP network. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Packer's method for explicit data rate control in a packet communication environment without data rate supervision, and Merchant's adaptive priority determination for servicing transmit and receive in network controllers into Williams's method of regulating a flow of data in a communication system and apparatus therefor with the motivation being to provide a method and system for regulating the rate of transmission under TCP/IP protocols network.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Kikuchi et al. (US#6,798,787) is cited to show the network system and communication band control method thereof.

The Yi et al. (US#6,771,603) is cited to show the method for controlling data flow in communication system.



The Shaham et al. (US#2004/0071085) is cited to show the system and method for a transmission rate controller.

The Packer et al. (US#6,741,563) is cited to show the method for explicit data rate control in a packet communication environment without data rate supervision.

The Shay et al. (US#2004/0114607) is cited to show the low latency digital audio over packet switched networks.

The Graf (US#6,397,251) is cited to show the file server for multimedia file distribution.

The Bird et al. (US#6,657,954) is cited to show the adapting receiver thresholds to improve rate based flow control.

The Ito et al. (US#6,052,734) is cited to show the method and apparatus for dynamic data rate control over a packet switched network.

The He et al. (US#6,) is cited to show the congestion control for cell networks.

The Nishimura et al. (US#6,754,200) is cited to show the rate control system of TCP layer.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149.

The examiner can normally be reached on Mon - Fri from 6:00 to 3:00 EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

**10. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:** (703) 305-9051, (for formal communications intended for entry)

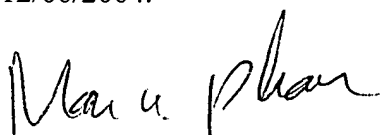
**Or:** (703) 305-3988 (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).

Mphan

12/06/2004.



MAN U. PHAN  
PRIMARY EXAMINER